

CLAIMS

What is claimed is:

1. An improved solenoid switch valve assembly for use in combination with a valve body of an automatic transmission, said solenoid switch valve assembly regulating the flow of automatic transmission fluid to a low/reverse apply circuit in a first position thereof and, alternatively, to a lock-up apply circuit in a second position thereof, said solenoid switch valve assembly including a solenoid switch valve and a pair of valve discs arranged in end-to-end relation for reciprocating movement within said valve body in fluid communication with said circuits, wherein the improvement comprises:

a tandem disc set wherein a mating pair of oversize valve discs are interlocked in sliding engagement to permit axial shifting movement of said discs relative to one another and reciprocating movement of said discs as a unit within said valve bore.

2. The improved solenoid switch valve of Claim 1 wherein said tandem disc set is comprised of a first oversize valve disc having an axially projecting stem portion and a second oversize valve disc having a mating hole formed therein to receive said stem portion, said second valve disc being radially disposed on said stem portion such that said discs are engaged in concentric relation to permit axial shifting movement.

3. The improved solenoid switch valve of Claim 2 wherein said stem portion includes a plurality of annular grooves formed therein, said grooves functioning to retain lubricating fluid and to carry away contaminants.

4. The improved solenoid switch valve of Claim 3 wherein said first oversize valve disc and said second oversize valve disc each include at least one annular groove formed in an outside diameter thereof, said at least one annular groove functioning to retain lubricating fluid and to prevent side-loading of said discs during operation.

5. The improved solenoid switch valve of Claim 1 wherein said tandem disc set is provided in a predetermined oversize configuration in the range of 0.020 to 0.025 inches over nominal standard size.

6. A method of improving hydraulic control of a torque converter within a automatic transmission system, wherein said transmission system includes an original equipment solenoid switch valve assembly within a valve body thereof for regulating the flow of automatic transmission fluid to a low/reverse apply circuit and, alternatively, to a

lock-up apply circuit within said system, said solenoid switch valve assembly including a solenoid switch valve member and a pair of switch valve discs arranged in end-to-end relation for reciprocating movement within a valve bore in said valve body in fluid communication with said circuits, said method comprising the steps of:

- removing said original equipment solenoid switch valve assembly from said valve bore;

- inspecting said valve bore for excessive wear;

- providing a replacement solenoid switch valve assembly including a tandem disc set having interlocking valve discs imparted with axial shifting movement relative to each other; and

- installing said replacement solenoid switch valve assembly including said tandem disc set into said valve bore.

7. The method of Claim 6 wherein the step of installing further includes the steps of:

- reaming said valve bore to a predetermined oversize condition; and

- inserting a matching oversize replacement solenoid switch valve assembly comprising an oversize tandem disc set and an oversize end plug into said valve bore.

8. The method of Claim 7 wherein the step of reaming further includes the steps of:

- positioning a reaming tool in concentric relation to an unworn portion of said valve bore wherein said solenoid switch valve member resides; and

- enlarging an adjacent portion of said valve bore wherein said oversize tandem disc set resides.

9. The method of Claim 8 wherein the step of enlarging is carried out by a manual reaming tool.

10. An oversize valve disc kit for use in combination with a solenoid switch valve within the valve body of an automatic transmission system, said oversize valve disc kit comprising:

- an oversize first valve disc having an axially projecting stem portion;

- an oversize second valve disc having a mating hole formed therein to receive said stem portion in sliding engagement, said second valve disc being radially disposed on

said stem portion such that said discs are engaged in concentric relation to permit axial shifting movement of said discs relative to one another and reciprocating movement of said discs in tandem within said valve body; and

and an oversize end plug for retaining said valve discs within said valve body, said end plug having an annular groove formed therein for receiving an O-ring seal.

11. The oversize valve disc kit of Claim 10 wherein said stem portion includes a plurality of annular grooves formed therein at regular intervals for providing lubrication and carrying away contaminants during operation.

12. The oversize valve disc kit of Claim 11 wherein said first oversize valve disc and said second oversize valve disc each include at least one annular groove formed in an outside diameter thereof, said at least one annular groove functioning to retain lubricating fluid and to prevent side-loading of said discs during operation.

13. The oversize valve disc kit of Claim 10 wherein said first oversize valve disc, said second oversize valve disc, and said end plug are provided in a predetermined oversize configuration in the range of 0.020 to 0.025 inches over nominal standard size.